

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-12. (canceled).

13. (currently amended): An isolated immunogenic, non-haemolytic *Actinobacillus pleuropneumoniae* (*App*) strain comprising at least one mutation in a transmembrane domain-encoding segment of the *apxIA* gene, and optionally at least one mutation in a transmembrane domain-encoding segment of the *apxIIA* gene, wherein the transmembrane domain-encoding segment in each *apxIA* gene and *apxIIA* gene corresponds either to nucleotides 886 to 945, to nucleotides 697 to 759, or to nucleotides 1105 to 1215~~only the A gene is mutated.~~

14. (previously presented): The strain of Claim 13, wherein said mutation is a deletion.

15. (previously presented): The strain of Claim 14, wherein said deletion is in a region of the *apxIA* gene which encodes a second transmembrane domain of the *App* ApxI exotoxin.

16. (previously presented): The strain of Claim 15, wherein said deletion is of nucleotides 886 to 945 of the *apxIA* gene.

17. **(previously presented):** The strain of Claim 16, wherein, said strain additionally comprises a deletion in a region of the *apxIIA* gene which encodes a second transmembrane domain of the *App* ApxII exotoxin.

18. **(withdrawn):** The strain of Claim 17, wherein said deletion is of nucleotides 886 to 945 of the *apxIIA* gene.

19. **(previously presented):** A vaccine composition against porcine pleuropneumonia comprising an immunogenically effective amount of the *Actinobacillus pleuropneumoniae* strain of Claim 13, and a pharmaceutically acceptable carrier, wherein the porcine pleuropneumoniae is caused by *Actinobacillus pleuropneumoniae*.

20. **(withdrawn):** An immunogenic and non-haemolytic strain of *Actinobacillus pleuropneumonia* having the characteristics of that deposited in the Colección Española de Cultivos Tipo under registration number CECT 5985, or a mutant thereof.

21. **(withdrawn):** A vaccine composition against porcine pleuropneumoniae comprising an immunogenically effective amount of the *Actinobacillus pleuropneumoniae* of Claim 20; and a pharmaceutically acceptable carrier.

22. **(withdrawn):** An immunogenic and non-haemolytic strain of *Actinobacillus pleuropneumoniae* having the characteristics of that deposited in the Colección Española de Cultivos Tipo under registration number CECT 5994, or a mutant thereof.

23. **(withdrawn):** A vaccine composition against porcine pleuropneumonia comprising an immunogenically effective amount of the *Actinobacillus pleuropneumoniae* of Claim 22, and a pharmaceutically acceptable carrier.

24. **(withdrawn-currently amended):** A method for obtaining an immunogenic, non-haemolytic *Actinobacillus pleuropneumoniae* (*App*) strain comprising the steps of:

(A) — identifying transmembrane domains of Apx haemolytic and cytolytic exotoxins from a virulent *App* strain; and

(B) — introducing a mutation in at least one region of the *apxA* gene of said strain, and optionally in at least one region of the *apxB* gene of said strain, wherein each region encodes a transmembrane domain of the Apx haemolytic and cytolytic exotoxins, and wherein the transmembrane domain-encoding region in each *apxA* gene and *apxB* gene corresponds either to nucleotides 886 to 945, to nucleotides 697 to 759, or to nucleotides 1105 to 1215.

25. **(withdrawn):** The method of Claim 24, wherein said mutation is a deletion.

26. **(withdrawn):** The method of Claim 25, wherein said deletion is in a region of the *apxA* gene which encodes a second transmembrane domain of the *App* ApxI exotoxin.

27. **(withdrawn):** The method of Claim 26, wherein said deletion is of nucleotides 886 to 945 of the *apxA* gene.

28. **(withdrawn):** The method of Claim 27, wherein said method additionally comprises introducing a deletion in a region of the *apxIIA* gene which encodes a second transmembrane domain of the *App* ApxII exotoxin.

29. **(withdrawn):** The method of Claim 28, wherein said deletion is of nucleotides 886 to 945 of the *apxIIA* gene.